

539,454

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
8 July 2004 (08.07.2004)

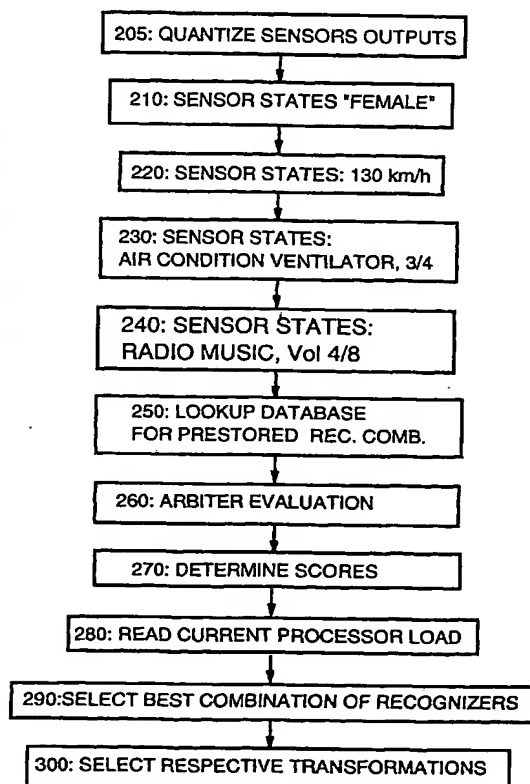
PCT

(10) International Publication Number  
**WO 2004/057574 A1**

- (51) International Patent Classification<sup>7</sup>: **G10L 15/20, 15/26**
- (21) International Application Number:  
PCT/EP2003/012168
- (22) International Filing Date: 31 October 2003 (31.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
02102875.8 20 December 2002 (20.12.2002) EP
- (71) Applicant (for all designated States except US): **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, NY 10504 (US).
- (71) Applicant (for LU only): **IBM DEUTSCHLAND GMBH** [DE/DE]; Pascalstrasse 100, 70569 Stuttgart (DE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **FISCHER, Volker** [DE/DE]; Dundorfweg 7, 69181 Leimen (DE). **KUNZ-MANN, Siegfried** [DE/DE]; Freiburger Strasse 30, 64126 Heidelberg (DE).
- (74) Agent: **DUSCHER, Reinhard**; IBM Deutschland GmbH, Intellectual Property, Postal Code, 70548 Stuttgart (DE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: **SENSOR BASED SPEECH RECOGNIZER SELECTION, ADAPTATION AND COMBINATION**



(57) Abstract: The present invention relates to a method and respective system for operating a speech recognition system, in which a plurality of recognizer programs are accessible to be activated for speech recognition, and are combined on a per need basis in order to efficiently improve the results of speech recognition done by a single recognizer. To adapt to dynamically changing acoustic conditions of various operating environments and to embedded systems having only a limited computing power available, it is proposed to a) collect (210,220,230,240) selection base data characterizing speech recognition boundary conditions, e.g. the speaker person and the environmental noise, etc., with sensor means, b) using (260) program-controlled arbiter means for evaluating the collected data, e.g., a decision engine including software mechanism and a physical sensor, to select (290) the best suited recognizer or a combination thereof out of the plurality of available recognizers.

WO 2004/057574 A1



ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments*

**Published:**

— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*